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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,709	10/27/2005	Hiraku Kawasaki	DK-US030689	9367
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EXAMINER				
CLARK, GREGORY D				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
02/03/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/554,709

Applicant(s)

KAWASAKI, HIRAKU

Examiner

GREGORY CLARK

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/07/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Examiner acknowledges the receipt of the Applicant's Amendment, received 1/7/2009. Claims 1-52; (1-5, 7-9, 14-18 and 20-24) amended, (6,10-13,19,25-26) original, (27-52) new.

On the basis of the applicant's position relative the Kawasaki (2005/0103481) reference cited in the first office action, the examiner has withdrawn Kawasaki as the basis of any rejections this appear in this current office action.

Rejections and objections made in previous office action that do not appear below have been overcome by applicant's amendments and therefore the arguments pertaining to these rejections/objections will not be addressed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The term "multi-component resin" does not appear in the specification and is thus undefined. The description and resin type does not allow for a focused search to make a suitable

prior art determination. While the applicants use the term "dual component" this is merely a material with two components, there is no support for the concept of having more than two components as claimed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1 –52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 14 and the associated dependent claims are rejected under 35

U.S.C. 112, second paragraph, the phrase "multi-component resin" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by " multi-component resin "), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). The examiner is not clear on what is counted or included in this term. The term could mean more than one reactive component, a single reactive component with a catalyst, or the solvent could be reactive and thus included. It is not clear what components are being counted to add up for form the so called "multi-component" material. There is no clear means to determine a proper prior art search.

Claims 27 and 40 and the associated dependent claims are rejected under 35

U.S.C. 112, second paragraph, the phrase "dual component resin" renders the claim(s)

indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "multi-component resin "), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). The examiner is not clear on what is counted or included in this term. The term could mean more than one reactive component, a single reactive component with a catalyst, or the solvent could be reactive and thus included. There is no clear means to determine a proper prior art search.

This is additionally confusing as applicants call epoxy material a one component resin. Typically epoxy materials are considered a two-part reactive mixture where two components catalyst-resin are blended with an epoxy modified resin to produce the reactive mixture. One working in the art would typically consider most epoxy material to be a "dual component" resin and covered within the scope of the claims. However, this does not appear to be what the applicant intends.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 2, 12-15, 25, 26-28, 38-41 and 51-52, are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya (JP 08-269367A).

Regarding Claims 1 and 27, Kamiya teaches the surface treatment of a plate-like substrate with a coating (paragraph 8). Kamiya discloses that the coating resin / formulation is a blend of melamine resin or epoxy resin with an acrylic resin. Additionally, urethane resin, phenol resin, and polyester resin can be used (paragraph 14). The examiners notes the on page 13 line 18 of the specification the applicant notes examples of dual component resin which include acrylic melamine. This resin is identical to a resin disclosed by Kamiya (paragraph 14). Kamiya does not disclose any pre-treatment to the surface which would roughen the surface. The examiner takes the position take the plate substrate is without protrusions or depressions.

Regarding Claims 2, 15, 28 and 41, Kamiya teaches the surface treatment of a plate-like substrate with a coating to impart a hydrophobic nature (paragraph 8) involving a perfluoroalkyl (hydrophobic organic) group functional silica material (paragraph 10).

Regarding Claims 12-13 and 38-39, Kamiya teaches that the plate-like material used as the substrate for the surface treatments are made from aluminum/aluminum alloy and the plate-like material is of a radiation fin of a heat exchanger (paragraph 1).

Regarding Claims 14 and 40, Kamiya teaches the surface treatment of a plate-like material made of aluminum/aluminum alloy and reports no specification of the metal surface. The desired surface properties were achieved by the coating method and Kamiya discloses the same metal used in the claimed invention.

As Kamiya uses a like material (aluminum) in a like manner as claimed, it would be expected that the aluminum would have the same characteristics claimed, particularly the surface after coating treatment, absence a showing of unexpected results.

Kamiya also discloses that the coating resin / formulation is a blend of melamine resin or epoxy resin with an acrylic resin. Additionally, urethane resin, phenol resin, and polyester resin can be used (paragraph 14).

Regarding Claims 25 and 51, Kamiya teaches the invention of claim 14. Kamiya also teaches that the plate-like material used on the substrate for the surface treatments are made from aluminum/aluminum alloy and the plate-like material is of a radiation fin of a heat exchanger (paragraph 1).

Regarding Claims 26 and 52, Kamiya teaches the invention of claim 14. Kamiya teaches the plate-like material is of a radiation fin of a heat exchanger (paragraph 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7, 16, 20, 29, 33, 42 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (JP 08-269367A).

Regarding Claim 3, 16, 29 and 42, Kamiya teaches the surface treatment of a plate-like substrate with a coating to impart a hydrophobic nature (paragraph 8). Kamiya presents data to show the plate-like substrate is rendered repellent to water after the coating treatment. Kamiya does not present the repellency data in the units of dyn/cm. Kamiya reports repellency by contract angle value (alternative means of reporting repellency).

It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust hydrophobic nature of the material selected to obtain the desire level of repellency the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Regarding Claims 7, 20, 33 and 46, Kamiya teaches the invention of claims 1 and 14. Kamiya does not mention the viscosity of the paint like coating used to coat a plate-like material. Since Kamiya teaches the same invention and fails to mention viscosity, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the viscosity of the solvent based coating for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Claims 4-6, 17-19, 30-32 and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (JP 08-269367A) as applied to claims 1 and 14 above, and further in view of Mizutani (6,013,724).

Regarding Claims 4-6, 17-19, 30-32 and 43-45, Kamiya does not give the means of how the coating is delivered or the solvent that is used. Mizutani teaches a solvent based hydrophobic paint coating which uses an organic solvent selected from butanol, octanol, and diacetone alcohol (Column 40, lines 54-58).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the appropriate solvent at the appropriate concentration, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Claims 8-11, 21-24, 34-37 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (JP 08-269367A) as applied to claims 1 and 14 above, and further in view of Lever (5,079,087).

Regarding Claims 8, 21, 34 and 47-48, Kamiya teaches a plate material treated with a fluoroalkyl containing silica (hydrophobic silica) thermoset resin to give the surface repellency to water (paragraph 10). Kamiya does not teach corrosion resistant treatment of the plate-like material. Lever teaches the treatment of plate-like (heat exchange fins, Column 1, lines 8-10) with an activated alumina and a organic resin formulation (Column 2, lines 12-16) that imparts

hydrophilicity and corrosion resistance to the plate-like material surface (Column 2, lines 33-37). Lever teaches that condensed water readily forms spherical drops as the surface of the fins that has a hydrophobic nature and these water droplets interfere with air flow in the spaces between the fins (Column 1, lines 19-22).

It would have been obvious to some one of ordinary skill in the art at the time of the invention to combined hydrophobic plate-material treatment of Kamiya with the hydrophilic and corrosion resistance plate-like treatment of Lever to give a means to prevent corrosion damage caused by water collecting on the fin surface and to prevent water droplets from interfering with air flow (Column 2, lines 33-37; Column 1, lines 19-22).

Regarding Claims 9, 22 and 35, Kamiya and Lever teach the invention of claim 8. Lever also teaches a hydrophilic activated alumina and resin formulation used to give a hydrophilic nature to the plate-like material dispersed in volatile organic solvents (Column 2, lines 20-23).

Regarding Claims 10-11, 23-24, 36-37 and 49-50, Kamiya and Lever teach the invention of claim 8. Both Kamiya and Lever do not teach the use of a chromic acid treatment or an oil removal treatment. Both Kamiya and Lever teach coating a plate-like substrate to achieve hydrophobic and hydrophilic surfaces.

As Kamiya and Lever use like materials (hydrophobic and hydrophilic based coating treatment) in a like manner (without chromic acid or an oil removal treatments) as claimed, it would be expected that the surfaces would have the same characteristics as claimed.

It would be expected that someone of ordinary skill in art at the time of the invention could have used the coatings taught by Kamiya and Lever to give hydrophobic or hydrophilic surfaces to the plate-like material without chromic acid or an oil removal treatments.

Response to Amendment

The applicant's arguments with respect to claims 1-52 have been considered but are moot in view of the new grounds of rejection necessitated by the applicant's amendment.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY CLARK whose telephone number is (571)270-7087.

The examiner can normally be reached on M-Th 7:00 AM to 5 PM Alternating Fri 7:30 AM to 4 PM and Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

GDC